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ABSTRACT

Among the suggestions that have been put forward to increase the collaboration between the business sector and educational institutions as a means for accomplishing program improvement are supporting the existing system where the schools are generally healthy, fostering innovative change, and working for major structural reforms in the system. However, economic principles of market structure need to be applied in judging the efficacy of business-education linkages, particularly at the postsecondary level, and in considering the extent to which these linkages should be encouraged by public policy. A market structure perspective provides a framework that is useful in judging the merits of various types of collaboration as well, since the specific activities that constitute "linkages" span a broad spectrum. Although studies have shown a number of instances of postsecondary collaboration that are leading to substantial benefits, a legitimate question to be asked is whether incentives established through public policy are indeed warranted. If such collaboration is occurring for economic motives, it may not generate program improvement at all. In some cases, appropriate public policy should be to increase competition rather than to encourage collaboration. (KC)

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EMPLOYER INVOLVEMENT WITH POSTSECONDARY TECHNICAL EDUCATION INSTITUTIONS

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Employer Involvement With Postsecondary Technical Education Institutions

Many suggestions are being put forward to increase the collaboration between the business sector and educational institutions as a means for accomplishing program improvement. For example, in Investing in Our Children, the Committee for Economic Development (1985) suggests--

> ... three alternatives for corporate involvement: supporting the existing system where the schools are generally healthy; fostering innovative, incremental change; and working for major structural reforms in the system. (p.12)

The contention of this paper is that the economic principles of market structure need to be applied in judging the efficacy of business-education linkages, particularly at the postsecondary level, and in considering the extent to which these linkages should be encouraged by public policy. A market structure perspective provides a framework that is useful in judging the merits of various types of collaboration as well, since the specific activities that constitute "linkages" span a broad spectrum.

The relevant economic transactions that occur at the postsecondary level include the purchase of educational services by students and the "purchase" of (trained) labor services by employers. At the local level, the transactions for educational services take place between a seller that has considerable market power (the institution) and multiple buyers who individually have far less (the students). In many localities, the institution or a given program within an institution may have a monopoly position. A characterization of the market that would perhaps be more general than monopoly is that of oligopoly (few sellers).

Similarly, at the local level, the firms that hire students are likely to have some degree of market power. In this case, since firms

operate on the demand side, they would be characterized as monopsonistic or oligopsonistic. The suppliers in this market, i.e., the students, again are multiple agents who individually have little market power. The general economic framework that represents postsecondary technical education, then, is a stream of transactions from one or a few (oligopolistic) suppliers of educational services to many (competitive) buyers, who then act as a competitive set of suppliers selling labor services to a few (oligopsonistic) employers. Figure 1 portrays this stream of transactions.[1]

Employers have become more and more involved in linkage activities because they perceive declining worker quality. That is, they are dissatisfied with the skills and/or knowledge that students are bringing to the (labor) market.[2] Education is seen as a primary input to the students in developing those attributes, and so, employers are facilitating better worker quality by attempting to influence that input. The economic motives for business are to reduce hiring and training costs and to find better matches between firms and the workers they hire.

The question then may be asked as to why the educational institutions, which already have considerable market power, are interested in promoting private sector involvement. From a market structure viewpoint, it can be

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[1]This particular market arrangement is rather rare in the U.S. economy. Another example would be the stream of transactions between suppliers of agricultural inputs (e.g., seeds or machinery), farmers, and co-ops that purchase farm products. Encouraging business-education linkages through public policy is tantamount to encouraging collaboration (or vertical integration) between the co-operatives and input-producers, say seed companies.

[2]The issue is more than employer "dissatisfaction." Employers claim that poor worker quality increases training costs, results in higher turnover, and increases hiring costs.

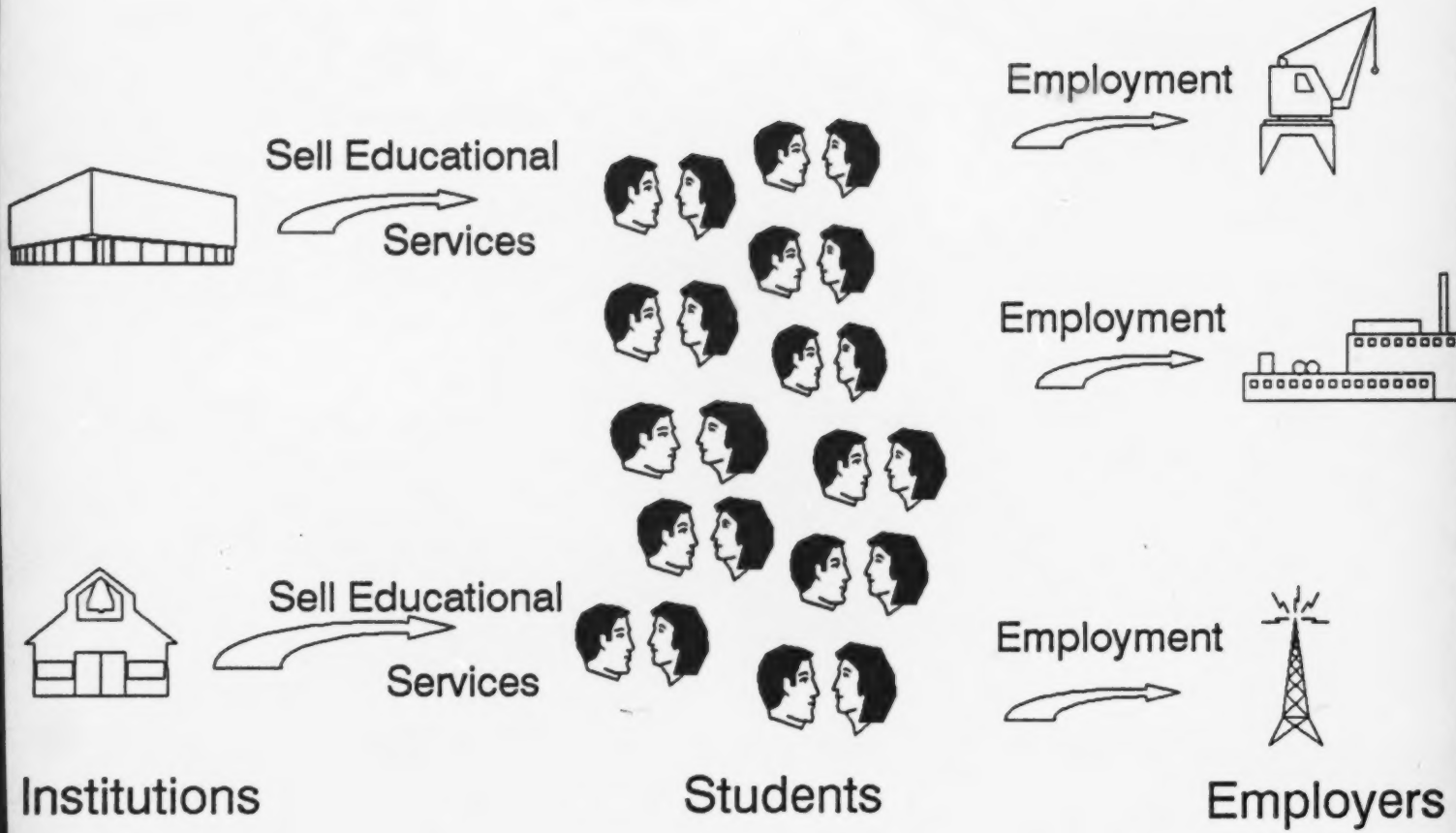

Figure 1
Economic Transactions Between Postsecondary
Technical Education Institutions, Students, and Employers

theorized that their motives might be to expand market share (by providing training to employers' work forces), to reduce costs, to differentiate their product, or to institute price discrimination (to the extent they can charge more for corporate training).

Is this economic perspective that emphasizes market structure realistic? Several studies have collected data from educational institutions and employers to identify motives for participating in collaborative arrangements. Findings from two studies that focussed on the employer perspective are summarized in the following paragraphs.

Powers and Powers (1988) identified six reasons why businesses seek cooperative relationships with higher education. These reasons were as follows:

- To meet corporate product, service, or management needs, for which faculty can provide expert advice
- To gain access to qualified graduates who are likely to become valuable employees, especially in fields where talent is rare such as computer science or engineering
- To upgrade the education and training of employees
- To control research and development costs, particularly by gaining access to state-of-the-art equipment and knowledge
- To take advantage of federally-sponsored research
- To keep research cost-effective (pp 25-26)

Peters and Fusfeld (1983) conducted a study for the National Science Foundation. They asked fifty-six companies why the businesses chose to interact with higher education institutions. The prime motivation was having access to quality manpower, particularly for the industries requiring technical expertise (chemicals, energy, and electronics). Seventy-five percent of all companies mentioned the need to acquire well-

trained personnel. The second most important reason mentioned was to obtain information to make technical advances, but not necessarily advances associated with usable products or processes.

What are the reasons for educational institution involvement? Powers and Powers (1988) outline some of the more important advantages to educational institutions for collaborative arrangements with business. They link with the business sector--

> --to improve their financial situations, particularly by increasing their enrollment and tuition revenues from education and training of corporate employees (and to boost faculty salaries);
>
> --to improve the quality of instruction and research offered through access to equipment and research facilities, and through updates for faculty, through collaboration with senior staff of the private sector partner who have special expertise;
>
> --to increase the numbers of graduates in the high-demand fields of engineering, computer science and mathematics, or to allow staff to participate as adjunct faculty as part of personnel exchange agreements; and
>
> --to foster industrial innovation, both in the development of new products and processes, and in capacity building for financially or technologically constrained businesses (pp. 21-28)

Peters and Fusfeld (1983) found in their study of 36 universities that the reasons for involvement with business are:

- To help diversify the university's funding base
- To provide students with real-world problem-solving (in research issues) and better training for those going into industry
- To avoid the bureaucratic "red tape" associated with obtaining government grant money (as cited by Powers and Powers, 1988, pp. 25-26)

In short, the financial considerations that the economic model suggest (improved hiring and reduced training costs for firms and larger market share for educational institutions) are the major reasons that the

firms and institutions themselves identify as impetus for collaboration, although there are other important benefits as well.

Extent and Types of Business-Education Collaboration

Dorsten and Hollenbeck (1989) conducted a study of the nature and extent of business and postsecondary occupational program linkages. The study further examined the incentives and disincentives that motivated employer and institutional staff behavior. This section relates the findings of that study.

Data from the postsecondary occupational education perspective were gathered by telephone interviews with 76 administrators of such institutions. Half of the institutions had been determined in a prior study to have very high levels of private sector participation and half had been determined to have very low levels.

The employer perspective was gathered through a survey of 661 employers. Half of the employers were nominated to participate in the study by administrators on the basis of current involvement with the institutions and half were selected randomly. Of the total number of employers, 62 percent were from small businesses.

Employer level of involvement with educational institutions was categorized as (1) active--e.g., continuous involvement over the last 4-5 years, such as regular attendance at advisory committee meetings, ongoing customized or contract training activity, cooperative education site, part-time faculty, or some combination of these--(2) limited active--e.g., intermittent involvement and/or involvement in only one activity--(3) minimal --e.g., few contacts with postsecondary institutions, such as hired 1-2 graduates or offered tuition reimbursement to current employees-

-(4) no contact--no current involvement or only minimal past involvement.

Table 1 shows that slightly more than a third of all employers were categorized as actively involved with postsecondary occupational education; about one-quarter were involved on a limited active basis; about one-quarter were involved minimally; and the remainder of the employers, 14 percent, had no contact. By the design of the study, the nominated employers would be expected to have more contact with education. The random sample of employers better represents the business community as a whole. Among the random sample, it can be derived from the entries in the table that 17 percent of the employers were actively involved; 22 percent were limited active; 36 percent were minimally active; and 25 percent had no contact. From this result, it may be concluded that three-quarters of all businesses have some level of involvement with postsecondary institutions and one in six participates actively.[3] Not shown in the table is the fact that less than 3 percent of all employers in the study indicated that they were negative about working with postsecondary institutions, and that becoming involved with them in the future under any circumstances would be unlikely.

Over a dozen types of employer involvement were identified--institutional or program advisory committee membership, part-time instruction, guest lectures, equipment/cash donations, participation at job fairs/career days, employee recruitment, upgrade training (e.g.,

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[3]These conclusions about the share of businesses that are likely to be involved in some collaborative activity with educational institutions are conditioned on the assumption of no systematic response bias. However, if very small businesses were less likely to respond to the survey than were larger businesses, then the conclusions likely overstate the percentages of participating firms.

Table 1

LEVELS OF PRIVATE SECTOR PARTICIPATION
WITH POSTSECONDARY INSTITUTIONS

Level of Participation*	Employer Sample		Total	Total
	Nominated (Row Percentage)	Random (Row Percentage)	(N)	(Column Percentage)
Active	76%	24	248	38%
Limited Active	54%	46	161	24%
Minimal	24%	76	161	24%
No Contact	8%	92	91	14%
Totals	N=321	N=340	N=661	100%

*See text for operational definitions of levels of participation.

Source: Dorsten and Hollenbeck (1989) Table 2.1.

tuition reimbursement), customized/contract training, technical assistance in management or in production, vending products/services, cooperative education, and faculty "return to industry" programs. Table 2 shows that the modes of involvement that were identified most often were, in order of frequency,--

--recruitment of employees (mentioned by 49.3 percent of employers)
--advisory committee memberships (36.8 percent)
--coops/internships (23.2 percent)
--attendance of training by current employees (20.1 percent)
--customized/contract training (14.1 percent)
--donations (13.2 percent)
--part-time teaching (12.6 percent)

The average number of types of involvement for the entire sample of employers was about 2.0. Large businesses were involved in more types of activities (average of 2.6) than were small businesses (average of 1.6).[4]

The survey that was conducted asked respondents to identify the specific incentives that were important in their decision to collaborate, in some fashion, with educational institutions. The motivating incentives for employers who were involved were, in order of frequency--

--to identify a source of students for recruitment purposes (mentioned by 31.2 percent of employers)
--to provide expertise in the education and training process (so that potential future employees will be better trained) (21.3 percent)
--to improve the productivity of current employees (19.1 percent)
--to contribute to the community or to pursue a personal interest (15.9 percent)
--to obtain technical assistance (3.9 percent)
--to sell a product/service (3.5 percent)

The most frequently mentioned barriers to employer collaboration and participation were, in order of frequency--

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[4]Large businesses were defined as firms whose (self-reported) employment size was greater than 49 employees.

Table 2

MODES OF EMPLOYER INVOLVEMENT WITH
POSTSECONDARY TECHNICAL EDUCATION INSTITUTIONS*

Mode of Involvement	Sample Type		Total
	Nominated	Random	
Membership on program or institutional advisory committee	59.8%	15.0%	36.8%
Employer has staff member that is a part-time instructor	18.4%	7.1%	12.6%
Employer has staff member that provides guest lectures	9.7%	7.4%	8.5%
Donation of equipment/cost	19.3%	7.3%	13.2%
Employer participates in career nights/ Job Fairs	7.5%	6.8%	7.1%
Employer recruits actively	44.9%	53.5%	49.3%
Employer reimburses (at least partially) tuition	22.1%	18.2%	20.1%
Customized/contract training	23.4%	5.3%	14.1%
Employer receives technical assistance	0.9%	0.9%	0.9%
Employer sells products/services to institution	1.6%	6.2%	3.9%
Co-operative education/internship	26.3%	20.3%	23.2%
Employer trains faculty ("return to industry")	1.3%	0.3%	0.8%
Other	8.1%	3.8%	5.9%

* Entries are percentage of respondents that participate in mode of involvement.

Source: Unpublished data from Dorsten and Hollenbeck (1989) study.

--inflexibility/bureaucracy of postsecondary institutions (mentioned by 34.0 percent of employers)
--perceived disinterest or ignoring of employer advice (22.4 percent)
--time constraints (12.1 percent)
--other features, such as loss of business or security concerns (3.6 percent)

The issues of extent of and types of collaboration are different for the administrators of educational institutions than they are for employers. Virtually all institutions collaborate to some extent and most participate in every type of collaboration. The focus of the institutional data collection was, thus, more focussed on incentives and barriers. The four most often mentioned successful strategies for involving business were as follows:

- Involve employers on institutional boards or program advisory committees (mentioned by 38 percent of the administrators)
- Personal contacts with employers to determine their needs and explain institution's capability (25 percent)
- Participation in local organizations such as the Chamber of Commerce or Private Industry Council (PIC) of the Job Training Partnership Act (JTPA) training system (17 percent)
- Maintain continuing contacts (13 percent)

A total of 33 percent of the educational administrators felt that a major barrier to employer involvement was one of "image;" administrators believed that education was seen by employers as either having an "ivory tower" image, at one extreme, or a "vocational education stigma," at the other. About one-quarter of the administrators felt that inadequate resources were a barrier to collaboration. Specifically, administrators identified the staff time required to make and maintain personal and professional contacts. Second, they pointed to the time, money, and even equipment, that are required for carefully planned and effectively executed meetings, informational materials, and specialized training curricula.

Finally, administrators felt that several types of external factors were detrimental to the development of successful business and education relationships. Bureaucratic rigidity within their own institutions or at the business establishment, employer attempts to narrow curricula to their own specific need, and contradictory requests from employers and organized labor were commonly mentioned problems challenging these administrators.

Conclusion

Collaboration and linkages between business and education are typically considered to be beneficial and to result in positive externalities sufficient in size to warrant public policy incentives. The Dorsten and Hollenbeck study, as well as other studies, identify a number of instances of collaboration that are leading to substantial benefits. But a legitimate question to be asked is whether incentives established through public policy are indeed warranted. The contention is that many of the extant linkages would likely have been (and in fact were) in place absent policy emphasis.

Furthermore, it is suggested here, that such collaboration may be occurring for economic motives (or, at least appear to have economic motives since they have unintended consequences such as profit maximization or ability to price discriminate) and that it may not generate program improvement at all. Public policy requirements of collaboration will, in circumstances of asymmetric market power, reinforce these economic motives.

There is little question that postsecondary technical education institutions must make some assumptions about the skills and knowledge that employers require when the educators are developing curricula and

making instructional decisions. In the absence of direct information from employers that can be gained through collaborative efforts, the educators will simply act on their own priors. The key question is really how the educators respond to the information. With considerable market power, institutions may have little reason to respond, particularly if the changes required are expensive. It is suggested here that regulating or enforcing employer involvement under these conditions is less likely to influence the needed changes than would increased competition.

In short, collaboration between postsecondary technical education institutions and employers can lead to program improvement. However economic theory suggests that such collaboration may be undertaken for economic motives and may not lead to program improvement if it leads to the improved economic condition of institutions that already have considerable market power and are inflexible to change. In those instances, appropriate public policy is to increase competition rather than to encourage collaboration.

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